2022 ACF Winter

Packet 15 by the Editors

Edited by Joseph Krol, Eric Mukherjee, Justin Zhang, Henry Goff, Eve Fleisig, Athena Kern, Ani Perumalla, Hari Parameswaran, Govind Prabhakar, Ethan Ashbrook, Nick Jensen

Tossups

1. Louis Visconti designed the tomb of a member of this family, in which twelve statues of Victory surround a raised dark red sarcophagus. An adversary of this family placed a nude statue of one of its members in a stairwell in Apsley House. In that statue, a member of this family holds an orb topped with a golden Nike. In a sculpture originally conceived as a clothed Diana, a member of this family holds an apple and reclines nude on a couch. This family, whose members were depicted as *Mars the Peacemaker* and *Venus Victrix*, patronized Antonio Canova. A ruler from this family was depicted with his hand in his waistcoat atop the Vendôme (“vahn-DOHM”) Column and commissioned the Arc de Triomphe. For 10 points, a ruler of France from what family was also painted *Crossing the Alps*?

ANSWER: **Bonaparte** family [or **Buonaparte**; prompt on Borghese with “what was her maiden surname?”]

<Painting & Sculpture>

2. This poem titles an essay collection that discusses Theodor Fontane (“TEE-oh-dor fawn-TAH-neh”) and *Avatar*, written by author and translator Daniel Mendelsohn. In this poem, people go “home lost in thought” as the “streets and squares” are “emptying rapidly.” This poem’s characters put on “rings sparkling with magnificent emeralds” to “dazzle” people who are “bored by rhetoric.” This poem asks, “Why are the senators sitting there without legislating?” and wonders “what’s going to happen to us without” the title characters, who are “coming today.” This poem, which ends, “They were, those people, a kind of solution,” titles a J.M. Coetzee novel in which the Magistrate lives on the Empire’s border. For 10 points, people fear the arrival of foreigners in what poem by Constantine Cavafy?

ANSWER: “**Waiting for the Barbarians**” [or “**Periménontas toùs Barvárous**”]

<European Literature>

3. In the 1920s, this ethnic group led the nationalist groups Azadî (“ah-zah-DEE”) and Xoybûn (“khoy-BOON”), which captured mountains like their later Dêrsim (“DAIR-sim”) rebellion. This ethnic group’s language may be written in Sorānī or with the Hawar (“hah-WAHR”) alphabet that uses the banned letters Q, W, and X. The 1975 Algiers Agreement cut foreign aid to this ethnic group during their second rebellion under Mustafa Barzani, who opposed their Arabization in the historically Turkmen city of Kirkuk (“keer-KOOK”). 1991 no-fly zones protected Shias and refugees of this ethnicity, who were killed with mustard gas in Halabja (“huh-lob-ZEH”) during the Anfal genocide led by Ba’athists. This ethnic group includes the Yazidis (“yuh-ZEE-dees”) persecuted by ISIS. For 10 points, what ethnic group’s PKK once agitated for an independent state at the crossroads of Syria, Iran, Iraq, and Turkey?

ANSWER: **Kurd**s [or **Kurd**ish people; accept **Kurdistan**; accept **Yazidi**s or **Êzîdî** or **Sorānī** until each is read; accept **Kurmanji** or **Gorānī** or **Zaza**; accept **Kurdistan** Workers’ Party or Partiya Karkerên **Kurdistan**; accept **Kurdistan** Democratic Party or Partiya Demokrat a **Kurdistanê**; accept **Kurd**ish Rebellion or Second Iraqi-**Kurd**ish War; prompt on Iranian peoples or Iranic peoples] (The first line refers to the Sheikh Said and Ararat rebellions.)

<World History>

4. People with this profession are searching for a file format that can streamline Henriette Avram’s MARC standard while retaining its high granularity. In 1905, sexist, racist, and anti-Semitic behavior led to the 1905 resignation of a person with this profession who founded the Lake Placid Club. Carla Hayden is the first African-American and first woman with this profession to hold a post that awards the Gershwin Prize. Members of the Ohio-based OCLC with this profession operate and maintain WorldCat. A system used in this profession organizes materials “by discipline, not by subject” into 10 top-level classes ranging from 000 to 900, which are used to assign alphanumeric call numbers. For 10 points, the Dewey Decimal System is used by people with what profession to classify books?

ANSWER: **librarian**s [or **library** workers; accept **library** science; accept **Librarian** of Congress; accept **information** scientists; accept **cataloguer**s until “WorldCat” is read; prompt on archivists or archivers]

<Other Academic>

5. This property can be added to “spring and dashpot” models via sliding frictional elements. This property names a material model in which shear rate behaves linearly only above a critical value, developed by Eugene C. Bingham. This property is exhibited when one vector lies outside a hexagonal prism surface by the Tresca criterion, which is similar to the von Mises (“MEE-ziz”) criterion. Metals are strengthened by making them exhibit this property during work hardening. Provided that brittle fracture does not occur, this property is exhibited [emphasize] *after* a material passes the yield point. This property is characterized by high stresses leading to permanent deformation. For 10 points, elastic behavior is contrasted with what behavior that lends its name to materials like PVC?

ANSWER: **plastic** behavior [or **plastic**ity; accept **plastic** deformation; accept **yield**ing until “yield” is read; accept **inelastic** deformation until “elastic” is read and prompt afterwards; accept visco**plastic**ity; accept Bingham **plastic**s; prompt on permanent deformation or word forms until “permanent” is read]

<Physics>

6. Choosing theories of this concept is compared in a Ruth Anne Putnam essay to choosing a career or picking a bottle of Pinot Noir. A book on *Liberalism and the Limits of* [this concept] was written by Michael Sandel, who taught a popular course on this concept at Harvard. A book titled for this concept holds that agents debating how to handle “primary social goods” would adopt a maximin strategy. A book titled for this concept argues that distribution of goods should be decided from the “original position.” That book titled for this concept argues that individuals should set up society without knowing their place in it, making rules from behind a “veil of ignorance.” For 10 points, John Rawls wrote a book titled “A Theory of” what concept, which is often equated with fairness?

ANSWER: **justice** [accept *A Theory of* ***Justice***; accept *Liberalism and the Limits of* ***Justice***; accept “Why Not a Feminist Theory of **Justice**?”; prompt on fairness or equality]

<Philosophy>

7. A constant representing this phenomenon, plus zeta, all over layer depth, gives a conserved potential in “shallow” conditions. The stability of Taylor columns arises due to this phenomenon, which is described by the linear “beta plane” approximation. This phenomenon, which dominates when the Rossby number is [emphasize] *small*, balances pressure gradients in geostrophic (“GEE-oh-STROH-fick”) flow. This phenomenon’s namesake parameter “f” is proportional to the sine of latitude. The term “minus two times angular velocity omega crossed with velocity” represents this effect, which drives the rotation of gyres. For 10 points, cyclones in the northern hemisphere spin counterclockwise due to what fictitious force that arises in rotating reference frames?

ANSWER: **Coriolis** effect [or **Coriolis** force]

<Other Science>

8. A hadith recorded by Abū Dāwūd states that Anas ibn Mālik told people at these events to stand in three rows. The subject of these events enters the state of *barzakh* (“bar-zahkh”), which then lasts until the *yawm al-qiyāmah* (“yohm al-kee-AH-muh”). Due to precedent set after an occurrence at Uhud, *shahīd* (“shah-HEED”) are exempt from requirements that these events be preceded by cleansing. Before this type of event, a person is often dressed in three pieces of white fabric. It’s not divorce, but women whose husbands have undergone one of these events must observe a four-month and 10-day period called an *iddah* (“ih-dah”), when she cannot interact with certain men or remarry. For 10 points, in Islam, what ceremony typically occurs within 24 hours of death?

ANSWER: **funeral**s [or **burial**s; or **janazah**; accept **funeral** prayers; prompt on death or dying or passing away or being killed or equivalents by asking “what type of event follows that?”]

<Religion>

9. Lileana Blain-Cruz’s 2022 revival of a play by this author featured an all-Black cast and added Hindu references to a scene in which the hours of the night are equated to philosophers. In another play by this author, the curtain falls for the final time as a woman asks her mother, “they don’t understand, do they?” A ceremony on the Atlantic City boardwalk honors a man as President of the Fraternal Order of Mammals in a play by this author whose first act revolves around an impending Ice Age. A character created by this author responds, “the saints and poets, maybe,” to a dead woman who asks if “anyone realizes life while they live it” during a memory of her twelfth birthday party. For 10 points, name this author of *The Skin of Our Teeth*, who created Emily Webb and the town of Grover’s Corners in his play *Our Town*.

ANSWER: Thornton **Wilder** [or Thornton Niven **Wilder**]

<American Literature>

10. An epigram by Martial advises substituting this island’s namesake hard biscuits for violence against the enslaved. In 200 BCE, this island refounded the Nesiotic League after it conquered eastern Crete. Famous athletes from this ally of Pergamon and Rome included the boxer Diagoras and the runner Leonidas. It’s not a Balearic island, but soldiers from this Doric-speaking island specialized as slingers. Artabazus II hired the mercenaries Mentor and Memnon from this island, which provided the epithet of the author of the *Argonautica*, Apollonius. After this Dodecanese island resisted a 305 BCE siege by Demetrius Poliorcetes (“pah-lee-or-SEE-tees”), it constructed a statue of Helios that was later toppled by a 226 BCE earthquake. For 10 points, the Seven Wonders of the Ancient World included what island’s Colossus?

ANSWER: **Rhodes** [or **Ródos**; accept **Rhodian**s; accept Colossus of **Rhodes** or Kolossós tes **Rhódou** or ho Kolossòs **Rhódios**; accept Apollonius of **Rhodes** or Apollṓnios **Rhódios**; accept Siege of **Rhodes**; accept Memnon of **Rhodes**, Mentor of **Rhodes**, Leonidas of **Rhodes**, or Diagoras of **Rhodes**; accept **Rhodian** biscuits] (The second sentence refers to the Cretan War.)

<Other History>

11. Two identical models of these inedible objects touch each other in Félix González-Torres’s piece *Untitled (Perfect Lovers)*. A Nazi fugitive is obsessed with these objects in the 1946 film *The Stranger*. Thousands of film and TV clips of these objects make up a montage by Christian Marclay. They’re not dots, but a type of these objects is the punchline to Harry Lime’s remark about Italy and Switzerland that ends the ferris wheel scene in *The Third Man*. A man’s hat blows off as he hangs from one of these objects in the film *Safety Last!* featuring Harold Lloyd. Camembert (“ka-mom-BAIR”) cheese in sunlight inspired the depiction of these objects in a surrealist painting, such as an orange one covered by ants and one draped over a tree branch. For 10 points, what objects melt in Salvador Dalí’s *The Persistence of Memory*?

ANSWER: **clock**s [or **watch**es; accept cuckoo **clock**s; accept clock **hand**s or clock **face**s; accept **timepiece**s; accept *The* ***Clock***; prompt on buildings by asking “what object on the building?”]  
<Other Fine Arts (Mixed Visual Arts)>

12. Performing this reaction on an alkene in water and then treating with sodium hydride produces an epoxide. A methyl ketone can be repeatedly subjected to this reaction before hydrolysis in order to achieve an overall acyl substitution of a methyl group with a hydroxyl group. Tertiary alkane carbons can undergo this reaction through a light-induced pathway which involves free radical intermediates. NCS or NBS can perform this reaction on allylic positions. Both this reaction and decarboxylation are exemplified by the Hunsdiecker reaction. This reaction is very slow for a violet element with atomic number 53, but occurs especially readily when it involves adding the most electronegative element. For 10 points, what reactions involve adding group 17 elements such as bromine or fluorine?

ANSWER: **halogenation** [accept **chlorination** or **iodination**; accept **bromination** until “bromine” is read and prompt afterwards; accept **fluorination** until “fluorine” is read and prompt afterwards; accept hydro**halogenation**; accept **haloform** reaction] (NCS and NBS are *N*-Chlorosuccinimide and *N*-Bromosuccinimide.)

<Chemistry>

13. A tale in which a boy became one of these creatures after swallowing a pearl that magically made grass grow originated an artistic motif of these creatures holding flaming pearls. One of these creatures threatened to flood a valley after his servant and one of his sons was killed by the peasant Nézhā (“nuh-jah”). One of these creatures stopped to bring rains to people and save a rabbit stuck on a log, leading to his delay in the Great Race. An azure one of these creatures named Áo Guāng ruled the Eastern Sea as one of their four kings. The Yellow Emperor ascended to heaven as one of these creatures, explaining their association with imperial power. For 10 points, name these benevolent beings in Chinese mythology, the only fictional creatures in the Chinese zodiac.

ANSWER: Chinese **dragon**s [or **lóng** or **lung**; accept **Dragon** Kings or **Lóng**wáng; accept Azure **Dragon** or Qīng**lóng**; reject “serpents” or “snakes” or “shé”]

<Mythology>

14. A subcomponent of this structure contains a central protuberance flanked by the L1 and L7-slash-L12 stalk. This structure contains the sarcin/ricin loop. A component of this structure is cleaved and inactivated after Gb3 is bound by shiga toxin. This structure’s subcomponents undergo a ratcheting motion partly dependent on EF-G. In some organisms, this organelle’s function is initiated by the Kozak consensus sequence, which triggers an incoming molecule to insert into the A site. In eukaryotes, they have a small 40S and a large 60S subunit, whose RNA components are synthesized in the nucleolus. This organelle catalyzes the formation of peptide bonds between amino acids brought to it by tRNA. For 10 points, name this organelle that translates mRNA into protein.

ANSWER: **ribosome** [accept **ribosomal** RNA or **rRNA**; prompt on RNA or ribonucleic acid; reject “deoxyribonucleic acid” or “DNA”]

<Biology>

15. A speech attacking one of this president’s initiatives begins by quoting Lincoln in saying “entertain no compromise; have none of it.” This president denounced the “little group of willful men” who filibustered the Armed Ship Bill. To lead a task force known as “the Inquiry,” this president called upon his advisor Colonel House. The “Irreconcilables” opposed a treaty signed by this president, which was also the subject of Henry Cabot Lodge’s “Reservations.” In 2020, this president’s name was removed from the school of Public and International Affairs at Princeton. This president endorsed maritime neutrality and self-determination to achieve international peace in his “Fourteen Points.” For 10 points, name this president who entered the United States into World War I.

ANSWER: Woodrow **Wilson** [or Thomas Woodrow **Wilson**]

<American History>

16. This composer’s violin concerto, which uses an energetic [read slowly] D-D, F, E-F theme in its *Allegro con fermezza* first movement, was premiered by David Oistrakh. In a ballet by this composer, the protagonist’s husband escapes arrest and stabs the protagonist before Kazakov nurses her back to health. Phrygia escapes with the protagonist during an *Adagio* by this composer that is often performed separately from one of his ballets. A triple wedding on a collective farm ends a ballet by this composer of *Spartacus.* In a piece by this composer, a loud timpani ostinato under descending trombone glissandi is accompanied by eighth notes on xylophone while dancers display their skill with swords as part of this composer’s ballet *Gayane* (“gah-yah-NAY”). For 10 points, name this Armenian-born Soviet composer of the “Sabre Dance.”

ANSWER: Aram **Khachaturian** [or Aram Il’yich **Khachaturian**]

<Classical Music>

17. An author with this surname was inspired by his residence in the Lake District to write a family saga titled *The Herries Chronicles*. Somerset Maugham ruined the reputation of that author with this surname by parodying him as the opportunistic biographer Alroy Kear in the novel *Cakes and Ale*. The term “serendipity” was coined by another author with this surname, who credited the fictitious Italian writer Onuphrio Muralto as the source of a novel in which Matilda is fatally stabbed by her own father. A nightmare in the Strawberry Hill house inspired that author with this surname to write a novel in which the villainous Manfred pursues Isabella after his son is crushed by a falling helmet. For 10 points, give this surname of Horace, the author of the Gothic novel *The Castle of Otranto*.

ANSWER: **Walpole** [accept Horace **Walpole** or Horatio **Walpole**; accept Hugh **Walpole** or Hugh Seymour **Walpole**]

<British Literature>

18. One of the oldest of these objects was accidentally uncovered in 1992 by Keith Parfitt during the construction of the A20 road in Dover. Archaeologists uncovered ornate animal heads inside a type of these objects called a karvein the town of Oseberg (“OO-suh-bairg”). In 1939, the self-taught archaeologist Basil Brown uncovered one of these objects that contained a bronze helmet topped with a gilded dragon. Raedwald (“RAD-wold”) of East Anglia is the likely dedicatee of one of these objects found at the site of Sutton Hoo. Early Scandinivians pioneered the clinker method for making these objects sturdier. Men and goods were placed inside these objects in a namesake type of Viking “burial.” For 10 points, Vikings used the “long” variety of what vehicles during invasions?

ANSWER: **boat**s [or **ship**s; accept Viking long**ship**s; accept war**ship**s; accept **ship** burial; prompt on watercraft; prompt on vessels; prompt on vehicles until read]

<European History>

19. A treatment mainly used for this condition, which was proposed in 2006 by Anthony Mannarino, Judith Cohen, and Esther Deblinger, uses the acronym “PRACTICE.” In a treatment initially developed for this condition by Francine Shapiro, a practitioner moves their fingers while the patient tracks them with their eyes. This condition is the main subject of Bessel Van Der Kolk’s book *The Body Keeps the Score*. Treatments for this disorder include TF-CBT and EMDR. Early characterizations of this disorder’s symptoms focused on how patients’ dissociation caused a “thousand-yard stare,” and noted how specific stimuli could lead to flashbacks. For 10 points, name this psychological disorder that can develop after experiencing a threatening event, which is often suffered by soldiers.

ANSWER: **PTSD** [or **post-traumatic stress** disorder; prompt on trauma responses or stress responses; prompt on shell shock or combat stress reaction; prompt on anxiety disorders]

<Social Science>

20. A poem about this historical event notes how “Open arms called, bodies entreated / From the impatient bedchambers of beauty—” and argues at the end that “We have not reached the destination yet.” The octogenarian Ma returns to a place where she witnessed violence during this historical event in the novel *Tomb of Sand*. A character born in the immediate aftermath of this event blinds her mother with her beauty and is named Sundari. To impress her communist lover Joseph D’Costa during this historical event, the nanny Mary Pereira switches the identities of two children. Children born during this event include Shiva-of-the-Knees and Saleem Sinai. For 10 points, children born during what event are given magical powers in Salman Rushdie’s novel *Midnight’s Children*?

ANSWER: **partition** of India and Pakistan [accept **Indian independence** or **Pakistani independence**; accept descriptions of the **division** of British **India** or **creation** of **India** or **creation** of **Pakistan**; accept the **Partition** riots; prompt on midnight by asking “what historical event occurred at midnight in that novel?”]

<World Literature>

TB. In this author’s first novel, a woman sexually targets Len Slank as part of her plan to have a child without getting married. In that novel by this author, Peter’s recounting of a rabbit hunt leads the market researcher Marian McAlpin to stop eating meat. Mary Whitney dies after an abortion in a novel by this author, in which the murders of Thomas Kinnear and Nancy Montgomery lead the doctor Simon Jordan to interview the title servant. The protagonist of another novel by this author starts having sex with the chauffeur Nick to make her more likely to provide a child for Serena Joy and her husband. That novel by this author of *Alias Grace* depicts Offred’s life in the totalitarian Republic of Gilead. For 10 points, name this Canadian author of *The Handmaid’s Tale*.

ANSWER: Margaret **Atwood** [or Margaret Eleanor **Atwood**]

<TB (World Literature)>

Bonuses

1. For 10 points each, answer the following about African novels whose titles include the word “name” or “names.”

[10h] This 2013 coming-of-age story about the Zimbabwean immigrant Darling, whose first chapter is titled “Hitting Budapest,” was the debut novel by NoViolet Bulawayo.

ANSWER: ***We Need New Names***

[10e] The pseudonymous Yasmina Khadra penned a novel titled “In the Name of” one of these figures. An Arundhati Roy novel is titled for one of these figures “of Small Things.”

ANSWER: **God**s [accept *In the Name of* ***God*** or *Les Agneaux du* ***Seigneur***; accept *The* ***God*** *of Small Things*; prompt on deity or deities or equivalents]

[10m] The 2014 novel *All Our Names* was written by an author who was born in this country, whose national epic is the *Kebra Nagast*.

ANSWER: **Ethiopia** [or Federal Democratic Republic of **Ethiopia** or Ye-**Ītyōṗṗyā** Fēdēralawī Dēmokirasīyawī Rīpebilīk or Rippabliikii Federaalawaa Dimokraatawaa **Itiyoophiyaa**] (Dinaw Mengestu wrote *All Our Names*.)

<World Literature>

2. In Dutch folklore, these creatures are distinguished from dwarves by their full beards and pointy red hats. For 10 points each:

[10e] Name these earth-dwelling creatures from European folklore, which resemble small humans. Today, many people decorate their gardens with small ceramic statues named for these creatures.

ANSWER: **gnome**s [accept garden **gnome**s; accept **kabouter**s]

[10h] Gnomes were described as the foremost earth elementals by this Swiss alchemist and physician. This proponent of the healing powers of nature publicly burned the books of Galen (“GAY-len”) and Avicenna (“AH-vee-senna”).

ANSWER: **Paracelsus** (“para-SELL-sis”) [or Theophrastus von **Hohenheim**; or Philippus Aureolus Theophrastus Bombastus von **Hohenheim**]

[10m] Paracelsus also coined the term for these small humans with exaggerated body parts that could be created by alchemists to perform menial tasks. The name for these beings is Latin for “little person.”

ANSWER: **homunculus** (“hoh-MUNG-kyoo-luss”) [or **homunculi**]

<Mythology>

3. At the 1784 Christmas Conference, this denomination officially took up an anti-slavery stance. For 10 points each:

[10m] Name this denomination whose “African Episcopal” offshoot, established by Richard Allen and Absalom Jones, is the oldest Protestant denomination founded by African-Americans.

ANSWER: **Methodism** [or **Wesleyan** Church; or **Methodist** Episcopal Church; or African **Methodist** Episcopal Church; prompt on AME Church]

[10e] Allen and Jones established the African Methodist Episcopal church in this city. The Declaration of Independence was drafted in this city’s Independence Hall.

ANSWER: **Philadelphia** [or **Philly**]

[10h] Another founder of the AME, Daniel Coker, established a congregation in this country in the 1820s. Many Black Loyalists who fled to Nova Scotia later resettled in this country.

ANSWER: **Sierra Leone** [or **Salone**; or Republic of **Sierra Leone**]

<American History>

4. This value remains constant in dilute acidic and basic solutions, making it useful for the calculation of certain acid-base quantities. For 10 points each:

[10h] Name this constant that corresponds to the ionization of water. In some derivations of this value, the negative base-ten log of this value is said to equal 15.7.

ANSWER: **autoprotolysis** constant [accept **autoionization** constant or **autodissociation** constant or **self-ionization** constant; accept **Kw** or p**Kw**; prompt on equilibrium constant]

[10e] When the temperature of pure water is increased, Kw increases and so do the concentrations of these two ions. The Arrhenius definition for acids and bases state that acids increase the levels of one of these ions while bases increase the other.

ANSWER: **H+** (“H-plus”) AND **OH-** (“O-H-minus”) [accept **proton**s or **hydronium**s or **H3O+** (“H-three-O-plus”) in place of **“**H+**”** ; accept **hydroxide**s in place of **“**OH-**”]**

[10m] Ballinger and Long arrived at the value of pKw equals 15.7 by assuming that a water species has an activity of one because it acts as one of these substances. DMSO is one of these substances, which are often removed by rotovaps.

ANSWER: **solvent**s [prompt on liquids or fluids]

<Chemistry>

5. This company’s CEO Ben van Beurden (“burden”) supported its move away from the Netherlands after the introduction of a 15 percent dividend tax in 2021. For 10 points each:

[10e] Name this oil company that officially dropped the words “Royal Dutch” from its name in 2022.

ANSWER: **Shell** plc [accept Royal Dutch **Shell** plc]

[10m] The name change accompanied Shell’s move from the Netherlands to this city, whose namesake stock exchange is tracked by the FTSE (“FOOT-see”) index.

ANSWER: **London** [accept **London** Stock Exchange]

[10h] This politician, who was then Britain’s Business Secretary, declared the move “a clear vote of confidence in the British economy.” This *University Challenge* series winner was later forced to step down as Liz Truss’s Chancellor of the Exchequer.

ANSWER: Kwasi **Kwarteng** [or Akwasi Addo Alfred **Kwarteng**]

<Current Events>

6. Answer the following about Pre-Columbian Ecuador, for 10 points each.

[10e] By the 15th century, people in Ecuador played chaza (“CHAH-sah”) with these objects. Costa Rica’s Diquís (“dee-KEECE”) culture made giant stone versions of these objects, which name a game played on Mesoamerican courts.

ANSWER: **ball**s [accept **round** objects or **sphere**s or **spheroid**s or **bombo**s; accept Mesoamerican **ball**game or Mesoamerican **ball**courts or juego de **pelota** or **pitz** or **ōllamaliztli** or **tlachtli** or **pok-ta-pok**; accept stone **ball**s or **bola**s de piedra or Diquís **sphere**s; accept national **ball** or **pelota** nacional]

[10m] Ecuador’s Las Vegas culture grew arrowroot and many varieties of this crop alongside Mexican maize. Companion planting of this crop, maize, and beans as the “Three Sisters” supplanted the Eastern Agricultural Complex.

ANSWER: **squash** [or **calabaza**s or ***Cucurbit****a*; accept **gourd**s or **pumpkin**s or **cushaw**s or winter **squash**; accept **zucchini** or **courgette**s or **marrow**s or summer **squash**; accept specific varieties of squash such as acorn **squash**; prompt on fruits]

[10h] These objects included the *Strombus* and *Conus* that decorated Cerro Narrio and Jama-Coaque (“HAH-mah-koh-AH-kay”) figures and the *Spondylus* that the Manteños (“mon-TEN-yohss”) traded to Peru’s Moche culture. Sclerochronology dates these objects’ namesake heaps or middens.

ANSWER: **shell**s [or sea**shell**s; accept **conch** shells or **concha**s; accept **shell** middens or **shell** heaps or **shell** mounds; accept **bivalve**s or **mollusc**s or **chiton**s]

<Other History>

7. This author’s immense popularity during her lifetime was first sparked by a novel whose protagonist escapes Colonel Delmare and promises to commit suicide with Sir Ralph. For 10 points each:

[10m] Name this cross-dressing French author of *Indiana*, who described her stay with Frédéric Chopin at an abandoned monastery in *A Winter in* *Mallorca.*

ANSWER: George **Sand** (“zhorz SAHND”)[or Amantine Lucile Aurore **Dupin**]

[10h] In this novel by Sand, the title Spanish girl, who was modeled on Pauline Viardot (“vee-ar-DOH”), rejects Count Zustiniani (“zoo-stee-NYAH-nee”) before Porpora sends her to Bohemia.

ANSWER: ***Consuelo***

[10e] Porpora helps Consuelo to take up this profession. The “phantom” Erik tutors the Swedish girl Christine Daaé (“dai-ay”), who has this artistic profession, in a novel by Gaston Leroux that inspired a stage musical.

ANSWER: opera **singer** [or **sing**ing; or **chanteuse**; accept **soprano**; prompt on musician or performer] (The novel is *The Phantom of the Opera*.)

<European Literature>

8. The “cadastral” type of this profession involves accurately demarcating property boundaries. For 10 points each:

[10e] Name this profession that entails precisely determining the locations of points on estates relative to one other.

ANSWER: land **survey**ing [accept cadastral **survey**ing]

[10m] Willebrord Snell pioneered this basic surveying technique, which determines the location of a point by dividing a region into eponymous shapes and accurately measuring the angles involved.

ANSWER: **triangulation** [or word forms like **triangulate**]

[10h] This device, which is used by surveyors to measure angles between points of varying heights, consists of a telescope that can move about two axes and is fixed to a level tripod.

ANSWER: **theodolite**

<Other Science>

9. The position of this sculpture’s hands supports the theory that it represents the Fourth Dynasty official Pehernefer. For 10 points each:

[10h] Name this unusually well-preserved and realistic sculpture from the Old Kingdom. The Louvre currently houses this sculpture, which depicts a cross-legged man with rolls of belly fat holding a half-rolled papyrus on his white kilt.

ANSWER: *The* ***Seated Scribe*** [or *The* ***Squatting Scribe***]

[10e] The *Seated Scribe* dates from the Old Kingdom of this civilization, whose idealized conventions in sculpture included using marks of age to depict wisdom. This civilization produced the Great Sphinx.

ANSWER: Ancient **Egypt** [accept **Misr** or **Kemet**]

[10m] Although the scribe is mostly made of painted limestone, inlaid rock crystal and magnesite were used for these features, which are also marked with organic paint to imitate ancient Egyptian use of kohl.

ANSWER: **eye**s [accept **eye**liner; accept **eye**lids or **eye**lashes; prompt on face or head]

<Painting & Sculpture>

10. Answer the following about argumentative fallacies, for 10 points each.

[10e] In this improper premise fallacy, the arguer begins with the truth they are trying to prove. This fallacy, which is named after a shape, often takes the form “If A is true, B is true. If B is true, A is true.”

ANSWER: **circular** reasoning [or **circular** logic; accept ***circulus*** *in probando*; accept “**circle** in proving”]

[10h] “Affirming the consequent” is a logical fallacy that is closely related to this [emphasize] *valid* argument form, which is typically stated as “P implies Q. P is true, therefore Q is also true.”

ANSWER: **modus ponens** [or **modus** ponendo **ponens**; or **affirming** the **antecedent**; or **implication elimination**; reject “modus tollens”]

[10m] Truths described by this adjective are technically true because the antecedent can’t be met. For example, since purple giraffes don’t exist, the phrase “all purple giraffes play quizbowl” would be this kind of truth.

ANSWER: **vacuous** truth

<Philosophy>

11. After controversially “taking the cross” during a ceremony organized by Bernard of Clairvaux, this ruler pledged to lead “Amazons” into battle. For 10 points each:

[10h] Name this ruler who supposedly forced Rosamund Clifford to commit suicide in a labyrinth.

ANSWER: **Eleanor** of Aquitaine [or **Aliénor** d’Aquitaine]

[10m] Eleanor pledged to lead “Amazons” during this crusade, during which she met Raymond of Antioch. This disastrous crusade, which began in 1147, was prompted by Imad al-Din Zengi’s capture of the County of Edessa.

ANSWER: **Second** Crusade

[10e] Eleanor’s court in Poitiers was recounted in Andres the Chaplain’s semi-fictional book titled for the “courtly” type of this concept. Troubadours sang songs about this emotion.

ANSWER: **love** [or **amour**; accept courtly **love** or **amour** courtois]

<European History>

12. Rearranging this equation gives the double reciprocal Lineweaver–Burk plot. For 10 points each:

[10m] Name this equation whose derivation assumes that the intermediate complex has a constant concentration during product formation. This equation states that the velocity equals “Vmax times S over quantity Km plus S.”

ANSWER: **Michaelis–Menten** equation

[10e] The Michaelis–Menten equation is used to model these proteins, which may be allosterically regulated. Substrates bind to the active site of these biological catalysts.

ANSWER: **enzyme**s

[10h] The Michaelis–Menten curve takes this shape when velocity is plotted against substrate concentration, with a horizontal asymptote at Vmax. In contrast, plots of cooperative enzymes show a sigmoidal curve.

ANSWER: **hyperbolic [**or rectangular **hyperbola**]

<Biology>

13. The 2021 Hirshhorn (“HER-shorn”) retrospective *The Weather* showcased the works of this multidisciplinary artist, who has invented several instruments, such as the talking stick and magnetic tape-bow violin. For 10 points each:

[10h] Name this artist whose album *Big Science* features a surprise hit that riffs on an aria from Jules Massenet’s (“zhool mass-NAY’s”) opera *Le Cid* (“luh seed”) to declare, “O Superman / O Judge / O mom and dad.”

ANSWER: Laurie **Anderson** [or Laura Philips **Anderson**]

[10e] Anderson often uses a vocoder to manipulate her voice towards a masculine register, which she dubs the audio analog of this gender-expressive performance art form whose practitioners call themselves “queens” or “kings.”

ANSWER: **drag** [accept **drag** queens or **drag** kings; prompt on crossdressing]

[10m] Anderson’s collaborative partner and husband was Lou Reed, the main songwriter of this group. An Andy Warhol print of a banana appears on the cover of this group’s debut album, which was written with German singer Nico (“NEE-koh”).

ANSWER: The **Velvet** Underground [accept *The* ***Velvet*** *Underground & Nico*]

<Other Fine Arts (Performance)>

14. This Old Testament book contains a prophecy that people will beat swords into plowshares. For 10 points each:

[10m] Name this book that states that an *almah*, or “young woman,” would bear a child named Immanuel. That mistranslated phrase from this first and longest Major Prophet was interpreted as a prophecy of Jesus’s virgin birth.

ANSWER: Book of **Isaiah** [or ​Sefer **Yeshayahu**]

[10e] Isaiah also obliquely foretold this figure’s role as a messenger of the coming messiah. Only Luke says that this man was a relative of Jesus, but all the gospels agree that he baptized many people before his death by beheading.

ANSWER: **John** the Baptist [or **John** the Forerunner or **John** the Immerser or the Prophet **John**; or **Iōánnēs** ho baptistḗs or **Yohanān​** Shliḥā]

[10h] Other influential parts of the Book of Isaiah include four songs named for this figure, on whom God calls to lead the nations.

ANSWER: the suffering **servant** [or ‘**ebed**; accept **Servant** Songs or Songs of the Suffering **Servant**]

<Religion>

15. In a preface, this author tries to demonstrate his maturity and sense of humor by showing his illustration of an asterisk, then noting, “this is an asshole.” For 10 points each:

[10m] Name this author who included his doodles of objects like a porcelain pink flamingo and a bucket of KFC in his novel about the descent into madness of Pontiac salesman Dwayne Hoover.

ANSWER: Kurt **Vonnegut** [or Kurt **Vonnegut**, Jr.]

[10h] The first illustration in Vonnegut’s *Breakfast of Champions* depicts a cow announcing its alternate title, which includes this adjective. This adjective also appears in the title of his novel about the secretive painter Rabo Karabekian.

ANSWER: **blue** [accept *Goodbye,* ***Blue*** *Monday*; accept ***Blue****beard*]

[10e] An illustration in this Vonnegut novel depicts a locket belonging to Montana Wildhack, whom the Tralfamadorians trap in a human zoo with the “unstuck in time” World War II soldier Billy Pilgrim.

ANSWER: ***Slaughterhouse-Five*** [or ***Slaughterhouse-Five****, or The Children’s Crusade: A Duty-Dance With Death*]

<American Literature>

16. In the early 18th century, this empire recruited scouts to clear brush, blaze false trails, and drain standing water based on medical expertise that included a precursor of germ theory. For 10 points each:

[10m] Name this empire whose founder Osei Tutu (“OH-say TOO-too”) modernized its army with tactics he learned from the Akwamuhene (“ah-KWAH-moo-hay-nay”). Many houses had indoor plumbing in this empire’s city of Kumasi.

ANSWER: **Asante** Empire [or **Ashanti** Empire; or **Asante**man; accept **Asante**hene]

[10h] After the Battle of Feyiase (“fay-ee-AH-say”), the Asante empire destroyed this kingdom’s capital of Abankeseso (“ah-bahn-kay-SAY-so”) and occupied its city of Jukwaa (“joo-KWAH”). The Fante (“fon-TEH”) confederacy formed to resist this Akan (“ah-KON”) kingdom, whose Agona people migrated south from Bonoman (“boh-noh-MON”).

ANSWER: **Denkyira** (“den-CHEER-uh”) [or **Denkyera**; or Kingdom of **Denkyira** or **Denkyira** Empire]

[10e] Denkyira (“den-CHEER-uh”) used firearms to control this resource around Adansi’s Obuasi (“oh-boo-AH-see”) mine. Europeans referred to Southern Ghana as the “coast” of this metal, which was traded north from Mali.

ANSWER: **gold** [or **Au**; accept **Gold** Coast]

<World History>

17. Sudhir Venkatesh, a sociologist and author of the nonfiction *Gang Leader for a Day,* went all-in with this methodology when he helped a gang beat up a woman’s alleged attacker. For 10 points:

[10h] Name this ethnographic methodology in which the researcher takes an active social role in the community they are studying.

ANSWER: **participant observation** [prompt on observation; prompt on embedded ethnography]

[10m] Venkatesh’s work was popularized in this book’s chapter “Why Do Drug Dealers Still Live with Their Moms?” This 2005 book has been criticized for misrepresenting the effects of abortion in the chapter “Where Have All The Criminals Gone?”

ANSWER: ***Freakonomics*** [or ***Freakonomics****: A Rogue Economist Explores The Hidden Side of Everything*]

[10e] Venkatesh now leads SIGNAL, a “Tech and Society Lab,” at this university. Franz Boas (“frahnz BOW-

ahss”) taught many anthropologists at this Ivy League university in New York City.

ANSWER: **Columbia** University [or **Columbia** University in the City of New York]

<Social Science>

18. Seventeen solo female voices represent the virtues in a sacred music drama by this composer, the earliest surviving medieval musical drama for whom the author of the text and music is known. For 10 points each:

[10h] Name this medieval German composer of the *Ordo Virtutum*, who claimed to use prophetic visions as musical inspiration.

ANSWER: **Hildegard** vonBingen [or Saint **Hildegard**; or **Hildegardis** Bingensis; prompt on von Bingen]

[10m] In the *Ordo Virtutum*, the only non-singing part is a male voice representing this character. A Tartini sonata is nicknamed for this character’s “Trill.”

ANSWER: the **Devil** [or **Satan**; or **Teufel**; or **Lucifer**; accept **Mephistopheles**; accept ***Devil****'s Trill Sonata* or *Il trillo del* ***diavolo***]

[10e] Medieval liturgical dramas such as the *Ordo Virtutum* typically made use of this genre of monophonic, unaccompanied music, including its Gregorian type.

ANSWER: **chant** [or plain**chant**; or **plainsong**; accept Gregorian **chant**]

<Classical Music>

19. A character holding one of these objects notes that she has been “toiling and moiling” for it, though her companion responds that it was “much too hard for me.” For 10 points each:

[10h] Name this sort of object, which the supposedly impotent Horner uses as code to discuss his sexual escapades with Lady Fidget, arousing the curiosities of Mrs. Squeamish, in William Wycherley’s play *The Country Wife*.

ANSWER: pieces of **china** [accept **porcelain**; prompt on plates or dishes]

[10e] The sex-crazed protagonist and double entendres in *The Country Wife* are typical of the lewd sensibilities during this English historical period that followed Charles II’s return from exile.

ANSWER: English **Restoration** [or Stuart **Restoration**]

[10m] Wycherley was praised as “the one appointed to lash this crying age” by this other Restoration playwright, who penned comedies of manners such as *Love for Love* and *The Way of the World*.

ANSWER: William **Congreve**

<British Literature>

20. In a dielectric, this property’s namesake “density” represents the density of induced dipole moments. For 10 points each:

[10e] Some sunglasses reduce glare by exploiting what property of electromagnetic waves, which corresponds to their direction of oscillation?

ANSWER: **polarization** [or electric **polarization**; or word forms like **polarize**d; accept **polarization** density; prompt on P-field]

[10m] An analog of Gauss’s law involves this operation on the polarization density. The usual form of Gauss’s law states that charge density over epsilon-nought equals this vector calculus operation applied to the electric field.

ANSWER: **div**ergence [accept **del dot**; reject “del”]

[10h] That analog of Gauss’s law gives the divergence of polarization density as minus a type of charge density described by this adjective, which means that it cannot move to an arbitrary point in a material.

ANSWER: **bound** [accept **bound** charge density or **bound** charge volume density]

<Physics>

TB. In the 8th century, one of the world’s oldest universities was established at one of these buildings named for nearby olive groves. For 10 points each:

[10m] Name these buildings that include the Uqba patronized by the Aghlabids in Kairouan (“kai-rah-WANN”). Many early madrasas developed around these buildings, like a “resplendent” one in the former city of Fusṭāṭ (“foose-TAHT”).

ANSWER: **mosque**s [or **masjid** or **masajid**; accept specific mosques like al-ʾAzhar **Mosque** or al-**Jāmi**ʿ al-ʾAzhar or Great **Mosque** of Kairouan or al-Zaytuna **Mosque**] (Cairo developed from Fusṭāṭ.)

[10e] Fatima al-Fihri founded the mosque and university of al-Qarawiyyin (“ell-kah-rah-WEE-in”) in this city, where the Idrisids built early tanneries. This Moroccan city names a tasseled red hat.

ANSWER: **Fez** [or **Fès** or **Fās** or **Fizaz**; accept Old **Fez** or **Fes** el-Bali; accept New **Fez** or **Fes** Jdid or **Fes** el-Jdid]

[10h] The Dar al-Makhzen (“dar ell-MAH-khah-zen”) was built during the expansion of “New Fez” by this sultanate, which was ruled by a Zenata Amazigh dynasty like the later Wattasids. This sultanate conquered the Almohads.

ANSWER: **Marinid** Sultanate [or **Marinid**s; or al-**marīniyyūn** or Ayt **Mrin**]

<World History>